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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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OLIFF & BERRIDGE, PLC			MAKI, STEVEN D	
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1733

DATE MAILED: 04/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/922,964

Applicant(s)

NEUGEBAUER ET AL.

Examiner

Steven D. Maki

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-30 and 32-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-30 and 32-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 1733

1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2-1-05 has been entered.

2) The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Incorporation of the last five lines of claim 32 into the specification except that "residual adjusting torque" should be --residual aligning torque--.

3) The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4) Claims 34-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claims 34 and 36, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed

Art Unit: 1733

invention (i.e. the new matter) is "the sipe angle of inclination not passing through zero for the sipe lateral width of the sipe" (a negative limitation having no explicit basis in the original disclosure). This description redefines the invention in a manner not contemplated by the original disclosure. The original disclosure fails to reasonably convey targeting a single "angle of zero" to the exclusion of all other angles.

In claim 36, the subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention (i.e. the new matter) is "the sipe angle of inclination is independent of a shape of the tread block or a shape of said laterally extending grooves". This language has no explicit basis in the original disclosure and redefines the invention in a manner not contemplated by the original disclosure. The original disclosure provides no guidance as to what is meant by an "independent" sipe angle. Moreover, the use of "or" instead of "and" in the quoted phrase implies that the sipe angle can be dependent on (the same as) the wall angle of the lateral grooves. Such subject matter is inconsistent with sipe and lateral groove angle shown in figures 3 and 4. The second full paragraph on page 3 of the specification relates to the method instead of the tire.

5) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6) Claims 20-30 and 32-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 32, the description of sipes on a first side of the second radial plane and sipes on a second side of the second radial plane is confusing since, with the tire having a circumference, the sipes may be considered as being on both sides of the second radial plane.

In claim 32, the scope and meaning of "tire residual adjusting torque" is ambiguous. In particular, it is unclear how "adjusting" affects the scope of claim 1. What is the torque adjusting? In claim 32, it is suggested to change "tire residual adjusting torque" to --tire residual aligning torque--.

In claims 34 and 36, the effect of "the sipe angle of inclination not passing through zero for the sipe lateral width of the sipe" on the scope of the claim is unclear. Does this language require the inclination of the sipe to vary with respect to the radial plane? Is "zero" an angle of inclination with respect to the radial direction, axial direction, or circumferential direction?

In claim 36, the scope and meaning, if any, of "the sipe angle of inclination is independent of a shape of the tread block or a shape of said laterally extending grooves" is unclear. One of ordinary skill in the art is not reasonably apprised of the scope of protection afforded by this language. It is unclear which limitation(s) are required and/or excluded by "independent". Examples: Is "independent" redundant to the sipe angle being defined by sipe walls (instead of the walls of the laterally extending grooves)? Can the sipe angle be independent of block shape (e.g. in plan) but be dependent on (correspond to) the shape of the laterally extending grooves?

Art Unit: 1733

7) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Idei

8) **Claims 20-29 and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Idei (JP 10-138715) in view of Japan '314 (JP 11-240314).**

Idei discloses a tire having a tread including two block rows comprising **symmetrical blocks** having sipes. The sipes clearly extend only partially across the block. In figure 3, one sipe is formed in each wall surface 10 and two of the sipes are perpendicular to the circumferential direction. The sipes are inclined with respect to the radial direction and are arranged about the block such that when the block is compressed a torque is created which reduces residual aligning torque caused by lateral force resulting from internal structure of the tire. Since each block has two sipes inclined in opposite directions, each block of one block row has a sipe, which is inclined opposite to a sipe in a block of the other block row. Two or more sipes may be formed in a wall surface 10 of the block. See paragraph 25 of machine translation. Idei does not recite that the angle at which the sipes are inclined with respect to the radial direction is 2-15 degrees. However, it would have been obvious to one of ordinary skill in the art to incline the sipes of Idei at an angle between 2 and 15 degrees with respect to the radial plane as set forth in claim 32 since (1) Idei teaches inclining the sipes such that the block can rotate when compressed and thereby generate a torque to offset SAT

Art Unit: 1733

and (2) Japan '314 teaches that a block having sipes may rotate so as to generate a torque for reducing SAT when the sipes are inclined at a maximum angle of 14.05 degrees with respect to the radial plane. Hence, one of ordinary skill in the art would readily appreciate from a consideration of Japan '715 and Japan '314 as a whole that an angle of 2-15 degrees with respect to the radial direction can and should be used for Japan '715's sipes to obtain the desired result of generating a torque for reducing RSAT.

As to sipes on a first side / sipes on a second side, some of the sipes in the blocks in one row on side of the equatorial plane of the tire are angled opposite some of the sipes in blocks of a block row on the other side of the equatorial plane. Claim 32 fails to exclude oppositely angled sipes in each block.

As to the forces extending in opposite directions to create the claimed overall moment, Idei teaches using the sum of the torques to offset the residual lateral force. See paragraph 23 of machine translation. This torque is created from opposite forces including the claimed opposite forces. Claim 32 fails to exclude a block capable of generating a torque. More specifically, one of the claimed forces reads on the force F generated by deformation of a block in the left intermediate block row on the side of the block having inclined sipe 9C and the other force reads on the force F generated by deformation of the block on the right intermediate block row on the side of the block having inclined sipe 9D.

As to claims 34-36, the inclination with respect to the radial direction of Idei's sipes is constant along the length of the sipe.

Art Unit: 1733

As to the dependent claims: As to claim 20, it would have been obvious to one of ordinary skill in the art to incline the sipes of Idei at an angle of 7 degrees with respect to the radial plane since (1) Idei teaches inclining the sipes such that the block can rotate when compressed and thereby generate a torque to offset SAT and (2) Japan '314 teaches that a block having sipes may rotate so as to generate a torque for reducing SAT when the sipes are inclined at a maximum angle of 14.05 degrees with respect to the radial plane. As to claim 21, note the sipe depth shown in figure 3. As to claims 22-23, note the angle with respect to the circumferential direction shown by either figure 2 or 3. In any event: As to claim 22, it would have been obvious to one of ordinary skill in the art to incline Idei's sipes substantially perpendicular to the mid-circumferential plane of the tire since (1) Idei teaches orienting two of the sipes parallel to the lateral grooves separating the blocks and (2) it is well known to use lateral grooves oriented at 90 degrees with respect to the tire EQ as evidenced for example by Japan '314. The sipe width in claims 24 and 25 would have been obvious in view of Idei's teaching to use sipes having a width less than 1.5 mm. As to claim 26, it would have been obvious to use the claimed zigzag shape for Idei's sipes since Japan '314 suggests using either a straight shape or a zigzag shape for sipes. As to claim 27, it would have been obvious to use Idei's sipes in shoulder blocks since Japan '314 suggests using sipes for affecting RSAT in all blocks of a tread pattern. As to claim 28, Idei teaches placing the sipes in intermediate blocks. As to claim 29, Idei clearly shows the sipes extending only partially across the block. As to claim 33, Idei's intermediate block rows are symmetrically disposed.

9) **Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Idei (JP 10-138715) in view of Japan '314 (JP 11-240314) as applied and further in view of van der Meer et al (US 5538060).**

As to claim 30, it would have been obvious to provide lateral grooves of Idei with the claimed generally V-shaped configuration in view of van der Meer et al's suggestion to use v shaped grooves between shoulder blocks in order to improve traction for off road use.

Herbelleau et al

10) **Claims 20-29 and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Herbelleau et al (US 4298046) and optionally German '697 (DE 19506697) and German '547 (DE 4107547).**

Herbelleau et al discloses a pneumatic tire having a tread, radial carcass and a reinforcement (belt) comprising two plies of crossed cables 21, 22. The tread includes rows of blocks defined by wide grooves 9 of depth H. Each block has slits (sipes) therein wherein the sipes in each block are inclined with respect to the radial direction in the same direction. All the sipes in the outermost block rows are inclined in one direction whereas all the sipes in the middle block rows are oriented in the opposite direction. As to the angle of inclination, Herbelleau et al teaches inclining the sipes at an angle of at most 45 degrees or more preferable at most 25 degrees. Herbelleau et al does not specifically recite using an angle of 2-15 degrees.

As to claims 32 and 34-36, it would have been obvious to one of ordinary skill in the art to incline Herbelleau et al's sipes at angle with respect to a radial plane of 2-15

Art Unit: 1733

degrees (a relatively small angle) since Herbelleau et al's teaching that inclining the sipes at angle with respect to a normal to the tread surface of at most 25 degrees is more preferred than inclining at an angle with respect to of at most 45 degrees directs one of ordinary skill in the art toward using relatively small angles for the inclined sipes.

As to symmetrical (claims 32 and 34-35), one of ordinary skill in the art would readily understand that the walls of each block of Herbelleau et al are symmetrical as claimed since (1) Herbelleau et al's invention is directed at arranging slits (sipes) so that some are active in braking while others are active in acceleration and (2) Herbelleau et al contains no description of using different grooves 9 so as to define an asymmetrical block. In contrast to describing the grooves as being different so as to require leading and trailing walls of the block being inclined at different angles, Herbelleau et al merely states that the "relief element 10 is bounded by two relatively wide grooves 9 of a depth H". In any event: It would have been obvious to bound Herbelleau et al's relief element with transverse grooves 9 having the same shape so that the relief element has symmetrical leading and trailing walls as claimed since German '697 and German '547, which like Herbelleau et al teach sipes inclined with respect to the radial direction, suggest defining the block having such sipes using transverse having the same shape. See figure 8 of German '697 and figures 1, 4 and 5 of German '547.

As to claims 34-36, these claims fail to contain any limitation relating to RAT.

In claim 32, the description of creating an overall moment on the tire to affect RAT fails to require tire structure not shown and disclosed by Herbelleau et al.

Herbelleau et al's pneumatic tire must have a RAT, as do all pneumatic tires.

Art Unit: 1733

Herbelleau et al's slits (sipes) must affect RAT because (1) the sipes in the middle block rows are inclined with respect to the radial direction in one direction whereas the slits (sipes) in the outermost block rows are inclined in a direction opposite to the one direction and (2) the block rows are asymmetrically arranged about the equator X-X'.

There is no difference between the inclination of Herbelleau et al's sipes and the claimed sipes. With respect to "affect", this reads on increasing the RAT (to compensate for a RAT that is too low where a certain RAT is needed for desired performance on a cambered road) or decreasing the RAT (to compensate for a RAT that is too high where a zero RAT is desired). By affecting the RAT as described above, Herbelleau et al's sipes must either increase or decrease the RAT and as such satisfy the requirement of "affecting" residual aligning torque. It is acknowledged that Herbelleau et al does not teach a tire designing method in which RAT is changed by changing sipe angle. However, the present tire claims fail to require a step of changing sipe angle to change RAT.

As to the dependent claims: As to claim 20, the limitation of 7 degrees would have been obvious in view of Herbelleau et al's teaching to incline the sipes at an angle of at most 25 degrees. As to claim 21 (depth 20-100%), Herbelleau et al suggests using sipes having a depth h near the depth H of the grooves (figures 1, 6). As to claims 22 and 23, see perpendicular orientation shown in figure 6. Claim 23 is generic to 90 degrees. As to claims 24 and 25, it would have been obvious to provide Herbelleau et al's sipes with the claimed small width (0.015-0.06 inch or 0.03 inch) in view of Herbelleau et al's teaching that the slits have a width e which is other than zero

Art Unit: 1733

(very small widths thereby being suggested). As to claim 26, Herbelleau et al suggests using zigzag sipes. See figure 6 and col. 4 lines 15-20. As to claims 27 and 28, see location of sipes in figure 6. As to claim 29, this claim reads on completely across since a sipe extending completely across the block also extends partially across. In any event: it would have been an obvious alternative to extend Herbelleau et al's sipes partially across the block since German '697 suggests extending sipes, which like those of Herbelleau et al's sipes are inclined with respect to the radial direction, only partially across the block (figure 8). Also, see German '547's teaching that internal fine treads [sic cuts / sipes] may or may not be connected to the grooves (page 3 of translation). As to claim 33, Herbelleau et al's "ribs" are equidistant. Claim 33 does not require the blocks to be equidistant.

11) Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Herbelleau et al (US 4298046) and optionally German '697 (DE 19506697) and German '547 (DE 4107547) as applied above and further in view of van der Meer et al (US 5538060).

As to claim 30, it would have been obvious to provide Herbelleau et al with the claimed generally V-shaped configuration in view of van der Meer et al's suggestion to use v shaped grooves between shoulder blocks in order to improve traction for off road use.

Japan 706

12) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 1733

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

13) Claim 36 is rejected under 35 U.S.C. 102(b) as being anticipated by Japan 706 (JP 4-100706).

See sipes 28, figures 1, 3 and 4 and machine translation. Sipes 28, which may be inclined at 5 degrees with respect to the radial direction, are "independent" as claimed since the sipe is defined by sipe walls instead of the walls of the lateral grooves.

Remarks

14) Applicant's arguments with respect to claims 34-36 have been considered but are moot in view of the new ground(s) of rejection.

The 102 rejection over Japan 314 has been withdrawn in view of the amendment to claim 32.

With respect to Idei (Japan 10-138715), applicant's arguments filed 2-1-05 have been fully considered but they are not persuasive because none of the claims require all of the sipes on one side of the midcircumferential plane to be inclined in a first direction with respect to the radial direction and all of the sipes on the other side of the midcircumferential plane to be inclined in a second direction with respect to the radial direction wherein the second direction is opposite the first direction.

15) No claim is allowed.

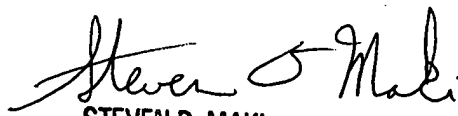
16) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

Art Unit: 1733

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
April 17, 2005


STEVEN D. MAKI
PRIMARY EXAMINER
~~GROUP 1300~~
Av 1733
4-17-05